

CENTRAL INTELLIGENCE AGENCY
INFORMATION REPORT

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COUNTRY	USSR (Kalinin, Moscow Oblasta)	REPORT	
SUBJECT	1. Electronic Development at MGB Unit 568 in Kuchino and Marfino 2. Treatment of Uranium Concentrates in the USSR	DATE DISTR.	5 November 1954
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This is UNEVALUATED

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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
 THE APPRAISAL OF CONTENT IS TENTATIVE.
 (FOR KEY SEE REVERSE)

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I. KUCHINO

- In July 1949 there were a number of Germans working as prisoners at scientific research tasks in Kuchino (N 55-46, E 37-58) for MGB Unit 568.
- The Germans had previously worked at other Soviet institutes or plants but had been arrested and sent to Kuchino.
- Kuchino was the headquarters for all installations belonging to MGB Unit 568.² The Kuchino installations were referred to as 568K. The main laboratories were referred to as NII 568. MGB Unit 568 was directed by Colonel (later Major General) Zhelezov. Free and arrested Soviets and Germans were employed there. The contract Germans were strictly isolated from the rest, whereas the arrested Germans and Soviets and the free Soviets worked together in the same laboratories.
- Installation 568K had four laboratories -- Laboratories 1, 3, 8, and 9.³ (See chart and layout sketch of the installation on pages 6 to 8.) The projects attempted at 568K from 1949 to 1951 included the following:

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High-voltage rectifier to be built.

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American-type printed circuits to be copied (see remarks on subminiature tubes in paragraph 7).

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Control unit for a VHF transmitter to set off an explosive charge to be built.

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STATE	X	ARMY	X	NAVY	X	AIR	X	FBI	X	AEC	X	OST	X
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(NOTE: Washington distribution indicated by "X"; Field distribution by "#").

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Wire recorder to be developed.

Quartz crystal work.

High-voltage source to be developed.

Small dry battery elements to be developed.

Asynchronous motors and a small servomotor to be developed.

Polarized filters to be produced.

A frontier defense wire sensitive to an enemy's approach to be developed.

A submarine buoy for coast defense to be developed.

Various tubes to be developed.

Private whims of MGB officers to be satisfied.

High-Voltage Rectifier.

5. In Laboratory 1, a German had to develop a high-voltage rectifier in Greinacher connection (Greinacher-Schaltung) for 30 kv. The Germans believed it to be a rectifier for a transmitter.

Printed Circuits; Subminiature Tubes

6. [] Laboratory 3 [] was given the task of developing the American system of printed circuits.⁴ In one example, a VHF (UKW) receiver with a subminiature tube in audio connection had to be printed on a ceramic plate. This task could not be properly carried through since the dielectrics needed for the capacitors with high dielectric constants were not available. For impressing the resistances, the graphite-bakelite paste was obtained from a plant producing Schicht resistances after long negotiations. A major brought it from a plant only 60 kms from 568K six weeks after it had been ordered.
7. The subminiature tubes used in this work were of low quality. The Germans believed that no top-quality tubes had been sent to the laboratory. The production department was supposed to have received better tubes. There were three types of subminiature tubes: a triode and two pentodes. One of the pentodes was 30 mm high; the other, 60 mm high. Possibly the smaller tube was of American origin.

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VHF Transmitter Control Unit

8. [] was also given the task of building a control unit (Tast-gerät) for a VHF transmitter which was to trigger off a tubeless receiver. The receiver was to set off an explosive charge through a relay. The task failed because no relay could be found sensitive enough to respond to the current of a detector receiver and because there were no control tubes (Tast-röhre) and no transmitter tubes which could be cut off (ausgetastet) with 10-msec pulses. [] succeeded in producing the pulse with spark gaps. The remote-controlled explosions were to enable hostile installations (or friendly ones about to pass into hostile hands) to be blown up at the proper moment.

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Wire Recorder

9. [] also developed a measuring instrument to determine the coercive strength of iron samples. This task was in connection with the development of a wire recorder (magnitofon). [] an arrested civilian, also worked at this task. The recorder group was led at this time by Major Sereda.⁵

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10. In the electroacoustic group of Laboratory 3, work was conducted on a wire for this task. An iron wire was galvanically coated with an alloy of 80 percent Ni and Co. This alloy was to have a maximum coercive strength of 300 oersteds. The coat was three microns thick and 0.15-mm wire was used.

developed an indicator instrument with an oscillograph. After application of a one-cm-long wire sample, an electromagnet could be excited with 5 amps for a short time, so that the sample was magnetized almost to saturation. The hysteresis curve then appeared on the oscillograph and one could take the coercive strength from this. The expected value of 300 oersteds was practically reached.

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11. In connection with this task, measuring instruments were also developed for the attenuation of the impressed (aufgeprägten) LF, the noise level, and the distortion factor.
12. By September 1951, Laboratory 3 had developed tape recorders but the wire recorder was not ready.

Quartz Crystal Group

13. A group of Soviets worked on quartz crystals in Laboratory 1. The group was headed by Aleksandr Aleksandrovich Ostrovskiy.

High-Voltage Source

14. A light high-voltage source giving very low powers was developed in the electro-physical workshop of Laboratory 1. With a Zamboni column, 1500 v were reached. This element was needed for a portable apparatus that was equipped with an infrared image converter. Installation 568K itself was not, as far as these Germans knew, concerned with infrared research.

Small Dry Battery Elements

15. The chemical group of Laboratory 3 developed small dry elements for portable series instruments. HgO was used as a depolarizer; Cu, Zn, Cd, Ni, and Fe were used experimentally as electrode materials.

Motors

16. The electrophysical group in Laboratory 3 developed normal asynchronous motors and a small servomotor for 2 v DC; this was to have a ϕ of 2 cms (sic) and serve a contact maker (Kontaktgeber) over a worm drive (Schneckenantrieb).

Polarization Filters

17. A prisoner, Professor Baranov (formerly a Reader at Moscow State University and an optics specialist), supervised the production of polarization filters. These were layers which were polarized by stretching (recken). Those which the Germans looked through had a weak violet, bluish, or reddish tinge.

Frontier Defense Wire

18. Laboratory 9 worked to produce a wire for the border troops which, when stretched along a border, would be sensitive to the approach of hostile elements. This task was solved by applying the earth capacity of the wire to an oscillating circuit in the control center; this oscillating circuit altered its natural frequency if the capacity changed.

Submarine Buoy

19. A task was set for the development of a submarine buoy for coastal protection; by ultrasonic means this was to become sensitive to the approach of ships.

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Tube Development

20. In the high vacuum group, rectifier tubes for potentials of 15 - 20 kv were developed at the same time as the rectifier (see paragraph 5). AG 1006 tubes were also copied; these were developed in Germany by Gema under the designation of VH 3 and later built by AEG as AG 1006. The Soviet copy was successful. [] also worked here on a tube, the cathode of which was to be heated by beta radiation (see paragraph 24).

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Private Soviet Whims

21. Various high MGB officers indulged in their private whims at 568K. A TV receiver was built. A toy with an electric cuckoo call was developed but it had too large capacitances in the RC generators, with resulting trouble in noise reproduction.

a Joint Task

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23.

- a. Between 1945 and September 1949, [] worked on the treatment of uranium concentrates at three different places. The first place [] was in Siberia, "far in the north, beyond the Urals". Prisoners were employed as specialists and laborers. The second place was by a mountain lake; the lake water was so cold that one could not bathe in it in summer. The third place was 100 kms from Kuchino.

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b.

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- c. At the third place, uranium concentrates from Aue, Germany, were treated on a factory scale. It appeared [] that, by September 1949, the construction of the uranium treatment plant was not quite finished. Up to then only concentrate was treated.

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24. At the beginning of November 1949, []

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"Using radioactive by-products of plutonium production in a uranium pile (Uranmeiler), one should construct a tube whose cathode would not be heated by an external current but would give the necessary emission by virtue of its contents of beta-radiating substance []

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25. After a short examination, this suggestion was eagerly received by the Soviets.

[] was promised everything he needed for this and [] was to help him.

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The two men had to write an essay on the matter and to estimate their needs.

They received some materials for the task in February 1950 but these were nothing special. Radioactive material was never delivered. [] concluded that

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the preparation of pure isotopes had not been achieved in the USSR by April 1950.

At the end of April 1950, the task was cancelled by the Soviets without

explanation. Up to that time they often discussed with [] the possibility

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of carrying out the task. In March 1950 [] said to Colonel Zhelezov

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that he supposed that in America this work had been proceeding for some time.

Zhelezov answered: "You are quite right; work is being done on this in the

USA. We know that from a source." [] asked him if he meant from an agent.

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Zhelezov said that he did.

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II. MARFINO

26. MGB Unit 568 also controlled an installation at Marfino (N 56-04, E 37-33). Informant believed (but is not certain) that this was known as installation 568M.

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27.

28.

29. One of the tasks at Marfino was the development of a means of scrambling telephone conversations. Apparatus was developed which so demodulated LF modulations that they could not be understood by an unauthorized tapper. Corresponding descramblers were built for the receiving stations. Carrier frequency telephony was apparently involved. One such installation has been delivered for the Moscow-Warsaw-Berlin line.
30. After the fall of Beriia, Colonels Khazin, Bergelson, and Dobrozanskiy were arrested. Major General Zhelezov was demoted to a laboratory assistant and sent to Marfino.⁷

III. MISCELLANEOUS

31. There was a decimeter aerial visible on the roof of Laboratory 1, Kuchino (building 7 on page 8). This aerial pointed towards Moscow

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32.

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The imprisoned Germans lived with the Soviet prisoners and learned of the outside world from constantly changing personnel. As prisoners no longer feared for their freedom, confidence was much greater among them than among "free" men.

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IV. SOVIET PERSONNEL AT KUCHINO

Arapov, Soviet equivalent of Dipl. Ing., prisoner, assistant in Laboratory 8.⁸

Baranov, Professor, prisoner, physicist specializing in optics. Formerly a Reader at Moscow State University.

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Bergelson, Colonel, member of the staff of MGB Unit 568.

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Bershadskiy [] chemist specializing in the chemistry of food. []

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Chesnokov, physicist, prisoner, assistant to the head of Laboratory 1.

Dobrozhanskiy, Lieutenant Colonel, head of the factory.

Gurov, Major, head of chemical group from September 1951.

Khazin, Lieutenant Colonel, head of Laboratory 1.

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Levkin, Major, head of Laboratory 3.

Ogorodnikov [] educated as a physicist. []

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Ostrovskiy, Major Aleksandr Aleksandrovich, head of crystal quartz group in Laboratory 1.

Sereda, Major, head of recorder group.⁵ []

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Shamshin, Major, deputy head of Laboratory 3.

Sodikov, []

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Termen, physicist []

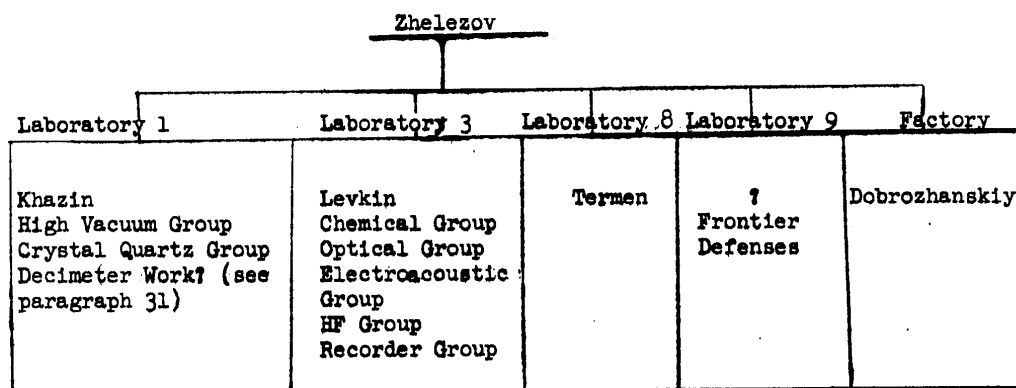
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Volkov, Major, head of recorder group.⁶

Zhelezov, Colonel (later Major General), head of MGB Unit 568.

Fedor Ivanovich (snu), head of chemical group until September 1951.

V. ORGANIZATION OF KUCHINO

Laboratory 1

Head: Khazin

Assistant: Chesnokov, arrested physicist.

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High Vacuum Group []

Crystal Quartz Group: Ostrovskiy.

Decimeter Group (see paragraph 31): [] This group was transferred in September 1950 to the newly opened Laboratory 8.

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Laboratory 3. Technical Development (These groups were concerned with practical applications of various ideas.)

Head: Major Levkin.

Deputy: Major Shamshin.

Recorder Group: Major Volkov.

Chemical Group: Occupied six rooms. Had a staff of ten at first -- Fedor Ivanovich (snu), head, a free civilian replaced in September 1951 by Major Gurov; six arrested Soviets; Merwaldis (sic), a Latvian chemistry student; Splechtina (after September 1950); and Dipl. Chem. Rutenberg. In April 1951, the group was joined by two young Soviet female chemists straight from ten-year school.

Laboratory 8

Head: Termen.

Staff: Bershadskiy, arrested chemist; Arapov, arrested chemist, Soviet equivalent of Dipl. Ing.¹⁰

VI. LAYOUT SKETCH OF KUCHINO

Legend

1. House for free laboratory leaders and MGB officers. Built 1950.
2. Laboratory 9, working on problems of frontier defense. When the number of prisoners in 568K exceeded the 500 mark, the excess was housed here. Built 1950.
3. Four-story building. MGB officers lived here in eight five-room and eight four-room apartments before building 1 was completed. Each apartment had a kitchen. When the officers moved out, Laboratory 3 moved in and all 72 rooms were put to use.
4. Living quarters of the prisoners. In 1949 there were about 150 prisoners; in September 1951, about 600.
5. Mess for prisoners.
6. Wooden administration building.
7. HQ of all MGB Unit 568 installations. In 1951 the central library was here. Laboratories 1 and 8 were here.
8. Building started in summer 1951 to house the HQ and library. Building was to house groups in the laboratories.
9. The factory. Employed about 200 persons, free and arrested. It produced pilot series of apparatus developed at 568K and small parts (e.g., screws) for use at 568K. Head: Dobrozhan'skiy.
10. Bathhouse.
11. High stone water tower which would be a good recognition feature in any aerial photos of the installation. This was about 1200 meters from Kuchino railway station. The Moscow-Kuchino-Gorkiy railway line lay about 300 meters south of the installation.

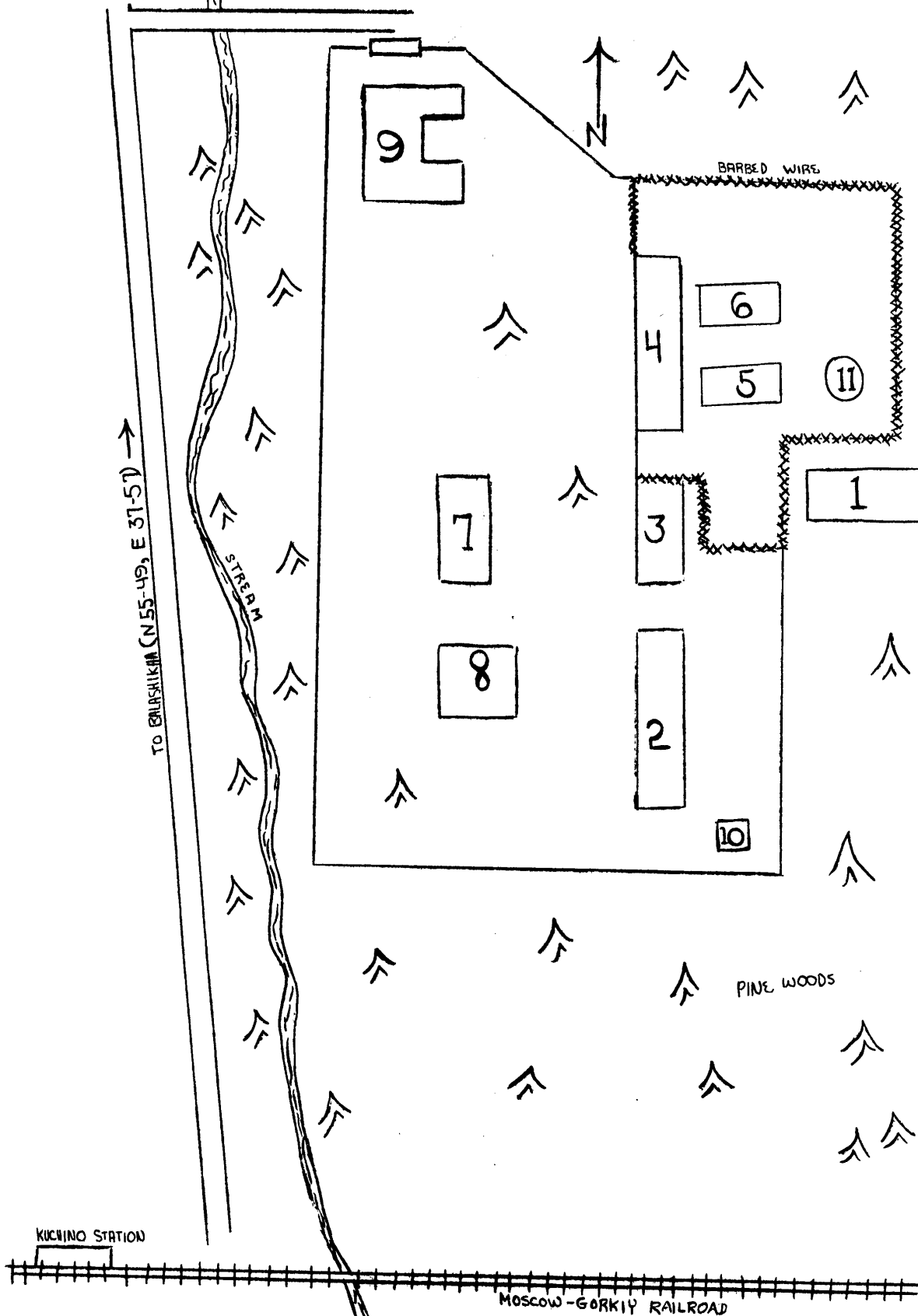
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LAYOUT SKETCH OF KUCHINO

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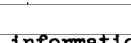
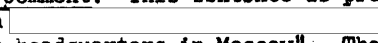


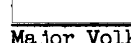
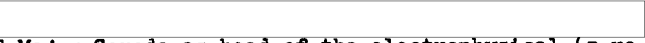
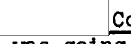
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1.  25X1
2.  Comment: This sentence is probably correct but contradicts information  which states that "MGB Unit 568 had its headquarters in Moscow". The quoted sentence should probably read: "MGB Unit 568 was subordinate to MGB headquarters in Moscow". 25X1
3.  Comment: The term "laboratory" in this report is used in the Russian sense -- it may include as many as five or six laboratories in the German sense. The Soviets referred to the smaller units as "groups", the term used in this report. 25X1
4.  25X1
5.  Comment:  Major Volkov replaced Major Sereda as head of the electrophysical (= recorder) group in Laboratory 3. 25X1
6.  Comment: Independent preliminary evidence indicates that infrared work was going on in Kuchino. 25X1

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9. 
10. 

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